Tentative Outline

Special Thematic Issue for the Current Analytical Chemistry

Title of the Thematic Issue: Nanomaterials-based Bio-sensors and Chemi-sensors in Diagnostics, Food, and Environmental Monitoring

Guest Editor: Long Wu

• Scope of the Thematic Issue:

The common types of smart and multifunctional nanomaterials used in sensors and analytical techniques are microfluidic assay devices (μFADs), micro-electromechanical systems (MEMS), optical sensors, electrodes, force or pressure sensors, stretch sensors, temperature sensors, magnetic relaxing sensors, etc.

These nanomaterials can help improve the performance and broaden the applications of analytical techniques in assuring the safety and quality of food and pharmaceuticals, developing new methodology approaches, facilitating physicians to diagnose diseases, supporting the legal process, as well as providing measurements and directions to trade and commerce. We aim to construct a research platform to bridge materialogy with analytical science and other regulations.

This research topic covers papers related to the development and use of smart and multifunctional nanomaterials related to their applications in diagnostics, food and environmental monitoring. We accept original, technical, or review papers on the following topics:

(i) Novel nanomaterials for analytical concepts, mechanisms and detection principles;

(ii) Development of nanomaterial-based chemical sensors and biosensors, including electrochemical, optical, thermometric, magnetic transducer or transducing microsystems;

(iii) Advances in fabrication technologies for chemical sensors, biosensors, chip-based detection devices;

(iv) Nanomaterial-based analytical techniques in chemistry, biology, food science, environment, etc.

Keywords: Electrochemical sensors; optical sensors (SERS, fluorescence, etc.); magnetic relaxing sensors; microfluidic assay devices (μFADs); sensing materials; nanozymes; hazardous materials

Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Sensors for Environmental Monitoring and Food Safety
- Advanced Biosensing Technologies in Medical Applications
- Advances and New Perspectives in Micro-Nanofabricated Sensors for Bioanalysis
- Trends and Perspective for Immunosensors

Tentative titles of the articles:

1. Aptamer-based SERS biosensor for whole cell analytical detection of E. coli O157:H7
2. Luminescent molecularly imprinted polymer nanocomposites for emission intensity and lifetime rapid sensing of tenuazonic acid mycotoxin
3. Flexible Screen Printed Aptasensor for Rapid Detection of Furaneol: A Comparison of CNTs and AgNPs Effect on Aptasensor Performance_
4. Emerging MXene-Polymer Hybrid Nanocomposites for High-Performance Ammonia Sensing and Monitoring
5. Paper-based immunosensors: Current trends in the types and applied detection techniques
6. Graphene Quantum Dot-Based Electrochemical Immunosensors for Biomedical Applications
7. Cuvette-Type LSPR Sensor for Highly Sensitive Detection of Melamine in Infant Formulas
8. Passive Resonant Sensors: Trends and Future Prospects

9. Environmental footprint of voltammetric sensors based on screen-printed electrodes: An assessment towards green sensor manufacturing
10. Multifuntional Gold Nanoparticles for the SERS Detection of Pathogens Combined with a LAMP-in-Microdroplets Approach
11. Electrochemical sensor based on Ni-exchanged natural zeolite/carbon black hybrid nanocomposite for determination of vitamin B-6
12. Methods and mechanisms of gas sensor selectivity.
13. Modulated 3D Cross-Correlation Dynamic Light Scattering Applications for Optical Biosensing and Time-Dependent Monitoring of Nanoparticle-Biofluid Interactions.
14. Electrochemical flow injection analysis for the rapid determination of reducing sugars in potatoes.
15. Development of a Label-Free LSPR-Apta Sensor for Staphylococcus aureus Detection
16. Approaches to the Rational Design of Molecularly Imprinted Polymers Developed for the Detection of Antibiotics in Environmental and Food Samples
17. Selective detection of rutin in the presence of ascorbic acid with a carbon nanotube electrode
18. Nanostructured Gas Sensors: From Air Quality and Environmental Monitoring to Healthcare and Medical Applications

Schedule:

- ✧ Thematic issue submission deadline: October 20, 2022

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